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MUSCLE BUILDING

Practical Points
for
Practical People

LUTHER HALSEY GULICK, M. D.
President American Physical Education Association
Director Physical Training, Public Schools,
New York City

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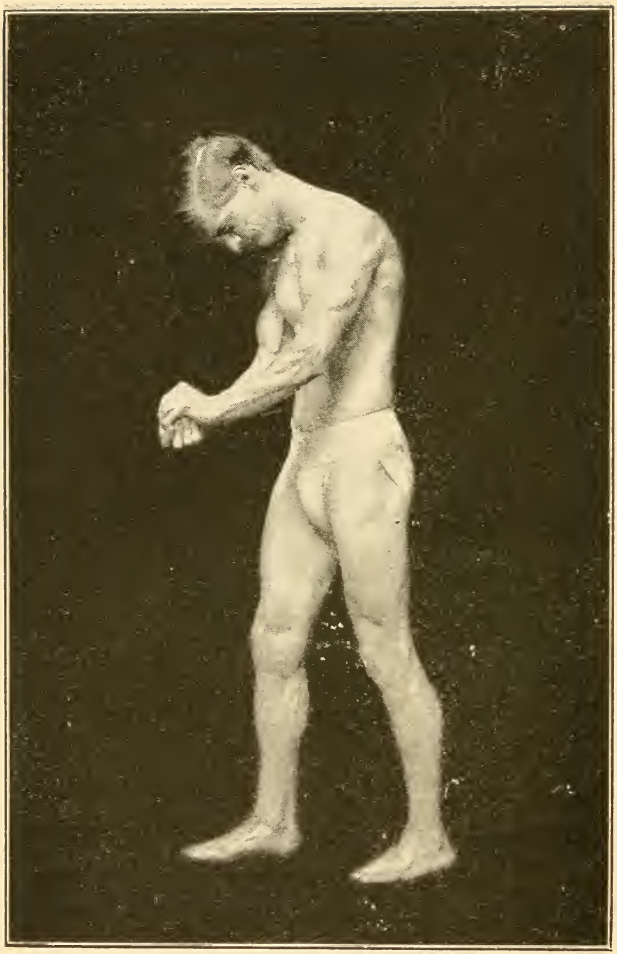
MUSCLE BUILDING

VIBRATORY EXERCISE.

Many business men at forty are fat and flabby; their arms are weak, their hands are soft and pulpy, their abdomens are prominent and jelly-like. When they run a block for a train, they puff and blow like disordered gasoline autos. Men get into this condition because they sit still too much; because they eat more than they need, and because they drink. No one gets into this condition because he wishes to. It is against the wish of everyone to have his body in this kind of order. He well knows that it lessens his working capacity, that it takes away a great deal of the fun of living; that it prevents his enjoying vigorous things as he did when a young man; and that it will probably cut off years at the end of his life. The reason that he does not come out of this condition is that he thinks it will involve a serious modification of his mode of living, a serious alteration of his business habits. He thinks it will involve



No. 1—The way in which squeezing intensly uses many muscles is beautifully shown here. The model has rolled up a wad of paper and is squeezing it as hard as he can.

doing an hour or two of monotonous exercise in a gymnasium every day.

Every man would like to have a firm hand, strong, clean-cut arms, muscles that stand out, a body that is solid, held together by firm muscles, strong vigorous neck, and large chest. A man cannot very well change the shape of the bones of his body; but aside from this, much can be done in a very short time every day. A month or two of work will help much to bring about that shape of the body that one desires, and that character of muscle which is one of the marks of vigorous manhood.

It is the purpose of this book to show how business men may, by a few minutes each day, develop their muscles in the way that they desire. That which is discussed in this article is not a complete system of physical training. This work does not aim to make a man graceful; it does not aim to make him a long distance runner, a jumper, or a fencer. This plan of exercise does succeed in almost every case, in quickly making a man muscularly strong and well developed. It does tend to make a man stand straighter, to respect himself more, to have a clearer

No. 2—Exercises of contracting the hand, if they are always followed by exercises by extending the fingers, which are shown in this picture, will never leave the hand in bad position. The delicate modeling of the muscles of the forearm is admirably shown.

head and better body. It does not take any apparatus —it can be done anywhere; it takes but little time. All that it demands is the willingness to do it on the part of the man. Many men have, in a single month, changed the whole appearance of their bodies from one of weakness to one of strength, from a condition of flabbiness to a condition of solidity. It is a common achievement for a man to increase the girth of his upper arm half an inch, or even an inch, in a month; to put two inches on his chest in the same length of time. If a man's muscles are fat to begin with, he may expect in the course of a month, to make them hard and muscular. In this case he will not expect to increase the size, as much as he will if his arms are merely soft to begin with and he has simply to build up.

THE ARMS.

We will begin with an explanation of how to develop the arms. Ordinarily, in the gymnasium one pulls against weights running over a pulley, or he lifts dumb bells, the object being to furnish resistance for the muscles to work against; good results are

No. 3—The blurring of the hands in this illustration is due to the trembling which is caused by the intense effort which is being made. The model well shows the powerful contraction of the muscles as far down as the waist. The beautiful modeling of the shoulder muscle, the deltoid, and of the muscles of the back which move the scapula or shoulder blade are rarely exhibited as finely as in this cut.

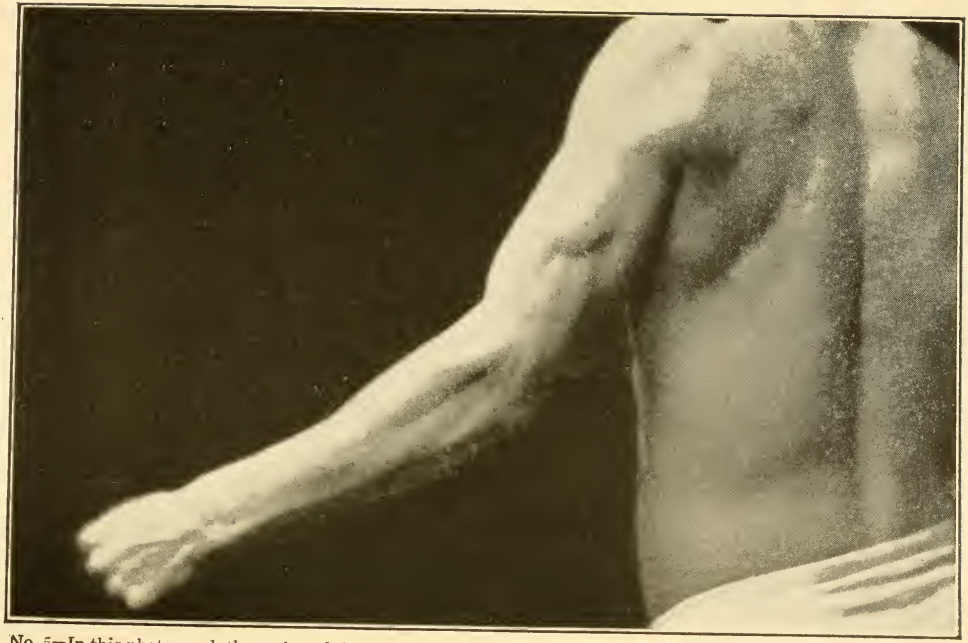
secured in this way; but to get the biggest development in the most rapid way, the muscles should be contracted *to the full extent of their ability* every time. A few contractions that are just as strong as a man can make, will count more in the development of size and also of strength than a very large number of contractions of a moderate kind. Everyone uses his hands a great deal, and yet the forearm does not grow large and strong. The reason is that a great deal of long continued moderate use does not develop the muscles as much in size as a few exercises of the intense kind.

It is a common experience for people working all the winter in a gymnasium, working faithfully for an hour three times a week, to expect they will have increased their measurements very much; they are frequently disappointed to find that their measurements have remained about the same. It is true, the muscles are harder than they were before, they sleep and digest their food better than before, but they had expected a big gain in size of the arms, chest and body muscles. The trouble in all these cases is that they **do not** take the kind of exercise that is adapted to

No. 4—In this exercise, the muscles of the front of the body, particularly the abdomen, are being contracted vigorously. Every one who does this exercise vigorously, should do twice as many in which the muscles of the back are contracted; the over-development of the muscles of the front of the body tends to make the individual round shouldered and flat chested.

building up muscular size; they took the exercise that is adapted to building up health. It is not at all true that there is any one kind of exercise that will accomplish all the known results to be obtained from exercise, any more that it is true that there is any one medicine which will accomplish all the results to be expected of medicine. One may exercise in order to become graceful in walking and moving about; one may exercise in order to become skillful in fencing, boxing, base ball or athletics; one may exercise in order to reduce fat; exercise may be taken in order to increase the activity of sluggish liver, and so on; but in each case if the results are to be secured, exercise must be adapted to the particular objects in mind. Thus, there is no such thing as a best exercise or as best exercises. The object of the exercises described in this article, is to increase the size and strength of the muscles. There is no attempt to increase their endurance or the skill with which one can use them.

These exercises do not directly aim to increase the health of the body, although this usually follows to some extent.



No. 5—In this photograph the action of the triceps or large muscle on the back of the arm is well shown. When the biceps is contracted hard this muscle can be contracted and thus balance the effort of the triceps.

The fundamental principle is that from the muscles shall be demanded as great power as possible; a hundred movements of a light character will not build up muscle as rapidly as five movements of great effort. This is a general principle and applies to all the muscles of the body.

One of the old statements of the evolutionists is that "function makes structure"—this is one of the great guides in physical training. The kind of exercise that demands a given structure will in general, if persisted in, give that structure. For example: to pound with a hammer all day does not demand big muscles, so that the result of the exercise is to secure endurance rather than size and strength; on the other hand, to put up a hundred-pound bell does not demand endurance, but size and strength; so the result of putting up a hundred-pound bell is increase of size and strength. In the gymnasium one rarely pulls to the full extent of his power, because he cannot tell exactly how much weight he can lift, nor are the pulley weights adapted to heavy weights.

The plan here described is to have the muscles pull against each other. Thus it is easy to have them work

No. 6—An illustration of the front of the thigh showing how the muscle comes down and terminates abruptly.

to their utmost capacity without straining them; for example: in illustration No. 7 the model is using the muscles that clinch his hand as hard as possible, and at the same time is contracting the muscles that open his hand; the result is that the hand stays half way open, the fingers are rigidly fixed, the tendons of the wrist are prominent, the fore-arm is hard. This exercise repeated fifteen to twenty times in the morning, the same number of times at night, and a few times occasionally as a man is walking along the street by day, will do more to increase the size of the muscles of the forearm than all the hand-shaking, hand-writing, handling knife and fork, etc., that a man will do all day. And more than this, a carpenter who is handling tools eight hours a day will not develop so big or so strong a forearm as will the man who takes this method. The long continued exercise with the hammer, saw and plane does not produce as strong contraction, and hence does not build up as large tissues, as this intense work that is done through the antagonistic muscles.

You will notice when you do this exercise as hard as possible, that the fingers and even the whole fore-

No. 7—In this picture every muscle of the arm is being worked, each so balanced against the other, that there is no movement, only a general trembling.

arm will shake with the intensity of the effort. This is the reason for the term *vibratory*. The position should be held under extreme contraction about three seconds, then the muscles should be allowed to become soft and the hand should be dropped. In about three seconds more the exercise should be repeated. The tendency will be not to work sufficiently hard at first. Every ounce of power that you have must be put into it, if you are going to gain more power. It is only by the investment of what you have, that you will gain more. Nature gives only what is necessary—if you make a demand upon your muscles for more power than you have, nature will gradually give it to you; but if you do not use what you have to the fullest extent, you will not be given much increase.

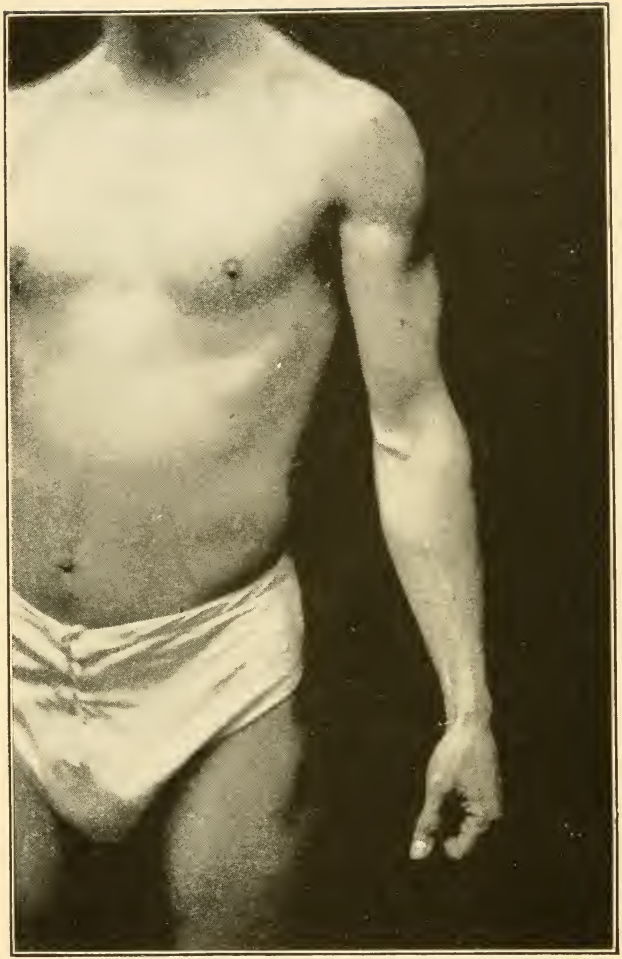
A few moments ago, I said that each exercise should not be continued for more than three seconds, and that then the muscles should be relaxed. The reason for this is that the circulation may be helped. When a muscle becomes hard by vigorous contraction, it tends to force out all the blood and lymph that is in it. New blood enters in under greater difficulties than under normal conditions; for this reason the

No. 8—Holding a wad of paper in the hand and squeezing it with all one's power for two or three seconds, is an excellent method for developing the whole arm. Its effect is well shown in the picture.

exercise should not be long in duration. The muscles should be allowed to become soft again. In order to favor its accomplishment a number of vigorous exercises rather short in duration should be taken.

One common way of exercising the forearm is to put something in the palm and grip it, a rubber ball, a piece of wood, or even a wad of paper. (Cut Nos. 1 and 8). The trouble with this exercise is two-fold; first, it develops only one set of muscles, the flexors, and the muscles that extend the fingers are left undeveloped; secondly, as a result of the development of the flexing muscles, and the non-development of the extensors, the hand when not in use tends to hang with the fingers almost closed into the palm (No. 9). The strong muscles have overbalanced the weak ones so that the hand is held nearly shut. By the method that I have proposed, flexors and extensors are developed together, and no matter how strong the forearm becomes, the hand and fingers will hang in a normal position.

The question may naturally be asked as to why I have said that gripping with the hand or exercising in some other way the muscles of the forearm with the greatest vigor will result in developing the muscles



No. 9—A person who continues an exercise which developes the hand too much will soon acquire a hand which hangs, as is shown in the accompanying illustration; this is ungraceful and clumsy.

of the upper arm and the chest. The reason is this: the muscles which close the hand are, some of them, attached to the forearm, thus the tendons have to pass through the wrist. In order that they may work efficiently it is necessary that the wrist be held rigid. You cannot possibly clinch your hand hard and have the wrist free of movement. Now, in order to have the wrist held in a rigid position, all the muscles running from it up to the forearm (and some of them run to the lower part of the upper arm), must be contracted with great vigor. The elbow joint must also be held rigid, for the muscles which attach to the upper arm could not act efficiently were their points of origin movable, so it is necessary for the muscles which control the elbow to be contracted vigorously. These muscles, some of them, go up and attach to the shoulder blade and clavicle. So the muscles which hold the shoulder must be fixed in order that the big muscles of the chest and back may have solid support. The ribs have to be fixed solidly. In order to fix the ribs solidly we have to stop breathing. When a person takes hold of anything with the hand and squeezes it as hard as possible, he holds his breath.

No. 10--If the muscles are pressed deeply after the exercise, it will benefit them.

If this exercise is tried in front of a looking-glass one will see that gripping can be done to a moderate extent without contracting the muscles of the upper arm. So that when one squeezes as hard as possible, practically all the muscles of the arm and body are involved. This is the reason why squeezing of the hand as hard as possible will result in the development of the arm and shoulder as well. (Nos. 1 and 8.)

I have explained this exercise somewhat fully, as it is a type of all the others. All the exercises that are mentioned are exercises in which one group of muscles is pitted against its natural opponent, so that both are exercised to their fullest extent. You will find that to contract these muscles of the forearm as intensely as possible will involve the stiffening of the whole arm, and, indeed, of the upper part of the body. Always put your attention upon the particular part where you wish the chief effect. You will find, also, that you cannot contract these muscles with the greatest power without holding the breath; accordingly, before beginning the exercise it is well to take half a dozen breaths just as deep as you can; first blow out all the air possible from the chest and

No. 11—After the various muscles have been gone over as in the preceding illustration, the muscles should be slapped; this effort gives a stimulating effect which has most excellent results. One should slap all the muscles of the body; the model is merely slapping his arms.

then inhale to the fullest extent. Repeat this three or four times and then begin. If this deep breathing makes you a little dizzy the first few days, it shows that you need the exercise very much. The dizziness is to be overcome simply by persistence. Take deep breaths just up to the point where you begin to feel dizzy and then stop. It will not be many days before you can do all the deep breathing that you want to without feeling dizzy.

Having done the preliminary deep breathing take a deep breath and hold it while you do the first exercise, which consists of contracting the fingers of the hand for three seconds. Then let the breath go, and also let the fingers relax; take another deep breath and contract the hand muscles again. Repeat this ten times. The whole exercise ought to take one minute. Then with the right hand, squeeze the muscles of the left arm from the wrist to the elbow quickly; with the left hand similarly treat the right arm. Then slap the left arm from the wrist to the elbow. Follow this with similar treatment of the right. (See cuts 10 and 11.)

You are now ready for the second exercise, which

No. 12—This illustration was taken immediately following the preceding; the only difference in the two being, that in this case the palm is facing the shoulder, while in the other case the palm is away from the shoulder. The far greater contraction of the biceps with the palm toward the shoulder is already shown. When this muscle is being measured, it should always be contracted in this way, for otherwise it will appear to be much smaller than it really is.

is to exercise and develop the upper arm. The hand is to be placed in a similar position to that which was taken when the muscles of the forearm were to be exercised. But now the attention is to be fixed upon the biceps, the large muscle which shows on the front of the upper arm. It is to be contracted against the triceps, the muscles on the back of the arm, as hard as is possible. The biceps is well shown in Nos. 12 and 13. Some also show the contraction of the hand occurring at the same time. In the model (No. 5), the biceps are being strained against the muscles on the back of the arm. The same preliminary deep breathing should be taken in this case, and indeed in every case. The exercise should be repeated ten times as before. There is little use in doing the exercise unless one is going to put into it all the effort possible.

In some of the pictures that are shown, the outlines of the hand are a trifle blurred; the reason for this is that in spite of the most rapid exposure that it was possible to make indoors, with a specially prepared camera, it was impossible not to show the vibration of the hands under the intense effort that

No. 13—The little bunch near the elbow well shows the small muscles which turn the palm toward the shoulder. It also shows in excellent form the construction of the biceps in the forward part of the arm and of the triceps on the back of the arm pulling against the biceps.

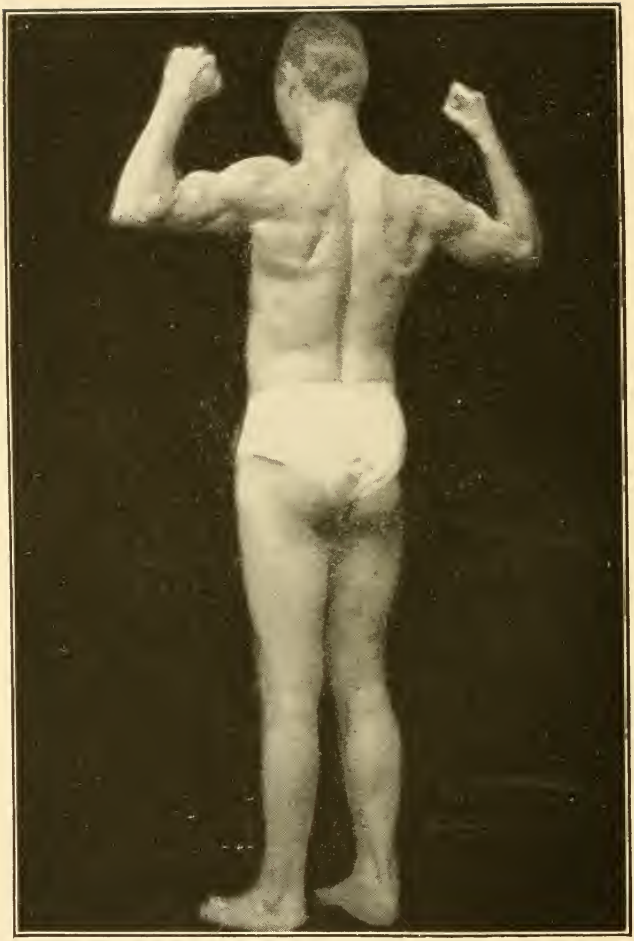
was being made by the model. Illustrations Nos. 5 and 7 show the triceps on the back of the upper arm as it is pulling against the biceps.

The next part of the body to be exercised is the shoulder. This is best done at the same time that the upper back is being developed. Illustrations Nos. 3 and 15 show these muscles in most vigorous contraction. The muscle on top of the shoulder, the deltoid, and the great surface muscle of the upper back are pulling the shoulder up and lifting the arm; while the great muscles of the chest are pulling the arm forward, and the other fibres of the trapezius are pulling the shoulder back and down. The result is that the shoulders and arms are set as if in iron. These great masses of muscles, pulling with all their inherent force, bind the joints together with the greatest solidity. The illustrations show well the contraction of these muscles. The extent to which this contraction is carried on over other joints is well shown. The double line of muscle extending half way down the middle of the back shows two muscles which pull the shoulder together; their development is well shown in No. 3. The tremendous sweep of the great band of muscle coming from

No. 14—In this picture is shown, how in extreme effort, the small muscles which lift the toes, are exceedingly active. The tendons on the back of the foot which stand out, are being pulled with great vigor.

the lower back, winding over the edge of the scapula, and then forward and upward to the upper arm, is superbly shown. This is the latissimus dorsi, the most powerful muscle that we have, by which we pull the arms down to the sides. This is effective in "chinning" one's self.

Taking a full breath, place yourself in this position as rigidly as possible for two or three seconds, then relax, and take a second breath easily, then another full breath, and repeat the exercise; pull the muscles with the utmost power that you possess. You will find it necessary to stiffen the neck and hold it well back. Remember that the shape of the body when it is being exercised vigorously is the shape that it tends to take during rest; so always exercise in positions that are strong and erect. Some of the illustrations show the contractions of the muscles on the front part of the body. These are given as type-forms rather than as the most desirable of positions for much exercise. *Exercises in which the back and neck are held rigidly erect, tend toward better carriage and should be taken about twice as frequently as exercises that pull the body forward.*



No. 15—Exercise of the muscles of the upper extremities and of the upper part of the body. The shading of color about the edge of the shoulder blade is the remains of a Summer's tan rather than the difference in muscle.

Illustration No. 16 shows well the exercise of the thigh. The great muscles that extend the legs are being contracted with the greatest vigor so that they stand out in massive folds. Most men walk quite a little; the result is that the average man has better legs than he has arms. These muscles are fully developed in many men, who otherwise are pretty flabby. It is well to bend the knee, hip and ankle joints a little. Then slowly contract the muscles to your utmost power until they stand out under the skin like piles of coiled rope, or like steel bands under the pressure of intense strain. After contracting the muscles of one thigh ten times, contract the muscles of the other thigh, similarly and an equal number of times.

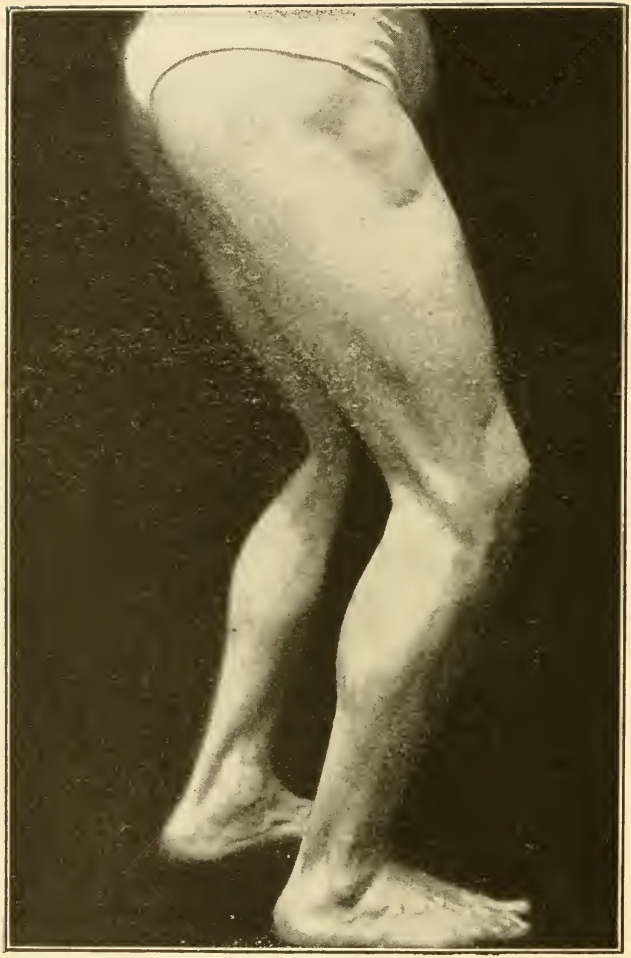
Illustration No. 17 shows well the contraction of the great muscles which flex the leg on the thigh. These muscles do not show particularly well in ordinary use. The exercise should be carried out on both sides of the body. Nos. 3 and 19 show the great muscles of the lower back in active contraction: also show how the muscles of the forearm, upper arm and shoulder are working at the same time. The

No. 16—This illustration is to show the contraction of the "quadriceps extensor femoris," which is the large muscle at the front of the thigh, immediately above the knee. It shades off into a heavy flat tendon, which includes the knee cap. In the model the shadows to the left show where the belly of the muscle is shading off into the tendon. This muscle straightens the leg every time one raises up from having stooped to the floor. The straightening of the knee is accomplished by means of this muscle. It is one of the strongest muscles of the body

fine lines running outward and downward from the spinal column show the intensity of the effort that is being made. The distended veins on the forearm are also indications of a similar character. This exercise should be carried on as are the others.

Illustrations Nos. 3 and 19 show exercises which are designed to be general—a large fraction of all the muscles of the body are working at once. In No. 18 the superficial muscle of the neck is shown in its great activity.

There is one danger to which these general exercises are exposed, that is, when so many muscles are used at once in such a vigorous way, the blood pressure of the body is increased with great rapidity. If the exercises are done excessively, the heart will be made irritable and sometimes over-developed. I have known a number of persons who, seeing the good effects of these exercises, have concluded that if the amount prescribed in these exercises would be good, twice as much would be twice as good, and have overdone the matter seriously. My father was once prescribing for an Hawaiian chief to whom he gave some pills, with instructions to take one three times

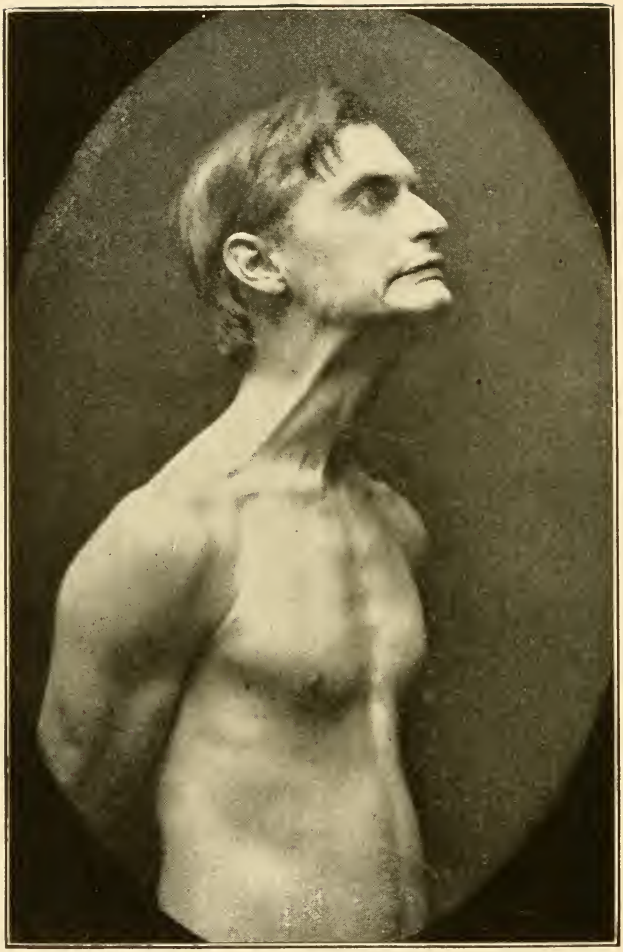


No. 17—The great muscles of the thigh are here admirably shown. The muscles which extend the thigh being on the front, and those which flex it being on the back. The knotted character of these muscles is well shown.

a day. He was so much benefited by the first that he concluded to take the whole box the following morning. His life was saved with great difficulty.

Another general caution in the use of these exercises needs to be given, and that is that beneficial effects are not usually secured by those who have completely passed the growing period. I should never encourage a man of over fifty to expect to profit by such exercises, and a man over forty should expect less than the young man may. Big girth of mucle is to be secured with advantage only during years when the body is at its maximum of efficiency.

Before undertaking to carry out this system of exercises, several things should be done. First determine how long it will be carried out; plan perhaps for one month, or at any rate, some definite period, otherwise one's resolution is apt to weaken and one will gradually do less and less, thinking to continue it when it is easier and business is not so pressing. This is usually an absolute fallacy. Men stop and do not begin it again. The thing to do is to undertake a definite plan. One month is a good length of time to undertake. It is long enough to

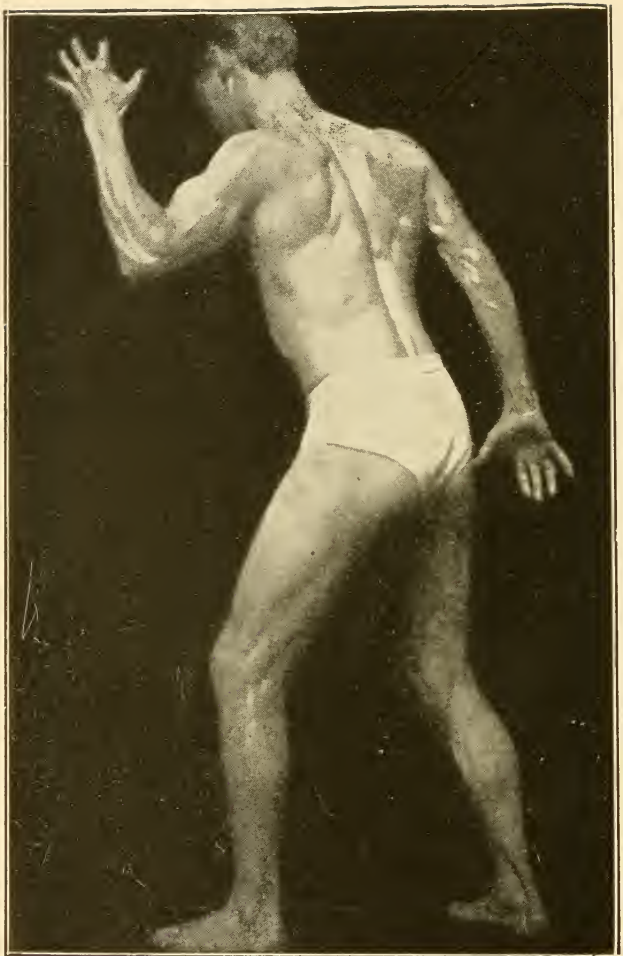


No. 18—Platysma myodies: This is a thin sheet of muscle which runs from the lower face down to the front of the body. Many animals have a corresponding muscle over most of the body. They can twitch their skin all over, just as we can twitch the skin of the neck. The skin of the chest can be pulled up nearly an inch, after one has become a little practised in the use of this muscle as a whole.

tax the will of most men; it is short enough to be within the ability of most men; it affords time enough to secure results which should be ample encouragement for continuation for another month.

Second, having settled the length of time that the programme will be followed out, next determine absolutely how much time each day, and at what time these exercises will be carried on. Ten minutes in the morning will do, but ten minutes in the morning and night will do more. It will be well to make a written record of one's purposes.

Third, measure the girth of your forearm, upper arms contracted (cuts Nos. 12 and 20), and straight, chest contracted and expanded, waist, thigh and neck. If you can get these measurements taken by someone who is familiar with such work, they will be accurate and satisfactory. You should have your measurements taken again at the end of the month in exactly the same way that they were taken at the beginning. They should, of course, be taken without any clothing on, that is, next to the skin, otherwise they will be quite unreliable. Arm should be as in No. 12 when measured, not No. 20.



No. 19—The model is throwing as many muscles of the body as he can into action at once. The straining of the muscles of the forearm, upper arm and shoulder, and also right leg, show peculiarly well. This is one of the type of exercises which if long persisted in, tend to produce irritated heart, as it throws so much work upon the heart suddenly.

Fourth, select two exercisers on which to work. At the end of the month take two others. Nos. 8 and 6 make a good combination on which to start.

After the exercise, particularly in the morning, it is well to dip a towel in cool water, cold if it is pleasant, and pass it rapidly over the whole body. This should be followed by vigorous rubbing with a coarse towel. Get a silk crash towel, or even an ordinary crash towel of good length, and after you have been dried by the bath towel, use this over your body and limbs with the same vigor and speed that the modern shoe polisher exhibits when doing his work, until the whole body glows and feels the way your shoes look.

No. 20—The large muscle of the upper arm or the biceps. This muscle not only bends the forearm upon the upper arm, it also twists the forearm so that the palm faces the shoulder. In this illustration, the palm is away from the shoulder; and while the muscle is contracted vigorously, still the length of the muscle is evident. When the muscle is being measured it should be held as in cut No. 12.

HEALTH

BY MUSCULAR GYMNASTICS

With Hints on Right Living

By

W. J. CROMIE

Illustrated with Half Tone Cuts of the Author

NEW YORK
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PREFACE

There are none with whom the author more greatly sympathizes than those whose bodies are weak and sickly, and who have not the facilities for daily scientific bodily exercise. Seeing the great need for exercise among the masses, and knowing that most books on this subject are too expensive, or too difficult to comprehend, the author felt it his privilege to publish one which is simple, and the price of which is within the reach of all. He would caution against these new original (?) *systems* of gymnastics (taught by mail) and otherwise, which will accomplish what no other *system* will. What are needed to-day are not *systems*, with physiological sounding titles, but, plain, simple gymnastics, athletics and games. If one will *read* this pamphlet and *systematically* practice the exercises and observe the hints herein contained, he will be amply repaid for so doing.

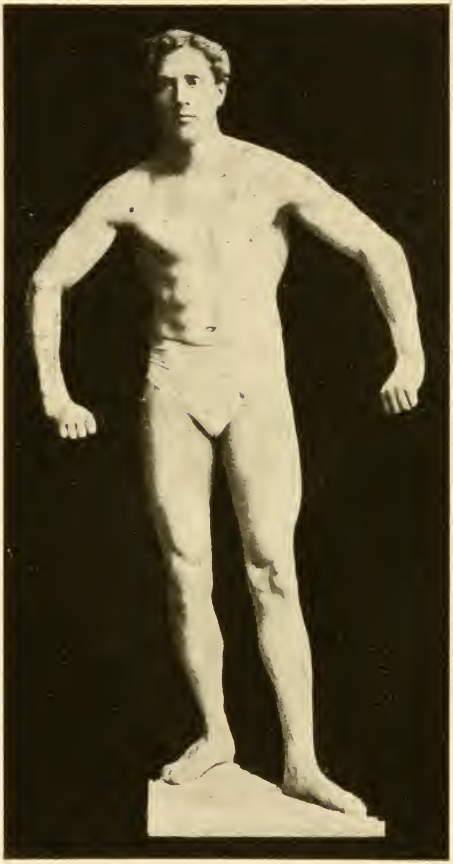
ARE GYMNASTICS AND ATHLETICS UNHEALTHFUL?

What do most young men of our country to-day desire? Is it not to get physical strength? Is it not the knowledge of how to acquire perfect health? Is the desire not a worthy one? Yes, the desire for health and strength is worthy, and is, furthermore, a Divine obligation, for in order that man be successful in life he must ever be at his best.

Whom do the men and women of our country envy? Is it one with a sickly, puny, impaired body; bent form and sallow complexion? No, it is the man who can run the fastest, jump the best, who can perform the most daring feats, whose will is strong, who makes stepping stones of obstacles, and surmounts all difficulties, until he reaches the highest attainable pinnacle of fame, wealth or noble manhood.

There is a story in pictures that can never be told in prose or verse. When one observes well developed athletes, he can be certain that it required long, persistent labor to get the body in that condition, and that it means hard work to keep it so.

The literature of the Greek and Roman races is filled with the power and beauty of their gods. Gaze on the statue of Hercules or Apollo, and are we not filled with admiration and awe? Even in our modern literature, do we not describe the athlete as one whose strength is Herculean? In whom shall we find ideals more perfect than those whom the Greeks and Romans deified and worshipped? When we desire a perfect female ideal, do we not refer to Hebe, Diana and the Venuses?



It is often too true that many big muscled men are unhealthy. Lifting heavy weights, engaging in too violent exercises, prize fighting, and other brutal sports will give one muscular development, but these are contrary to nature and intelligence. Health must be the foundation for muscle and body building.

There always have been and probably always will be some well meaning persons who argue against gymnastics and athletics. They say that the athlete exercises his muscles at the expense of the mind, and that athletes contract disease and die young.

The first of the objections is as old as Plato (430 to 347 B. C.), who described some of the athletes of his time as "sleeping away their lives." Galen, in speaking of the Greek and Roman athletes, described them as "heavy and stupid." Might not the Latin proverb, "*Mens sana in corpore sana*," have come to the mind of the ancient writer by seeing and knowing athletes in whom the physical and mental qualities were both well developed? Plato and Galen probably meant that the man who gave all his time to developing a massive physique at the expense of the mind, was little better than the beast of the field.

Viewed in that sense athletics and gymnastics would do more harm than good, for mental culture is better than physical, as is Spiritual better than either or both mental or physical. Usually there is more danger of the "book worm" neglecting to take necessary exercise than there is of the physical culturist not taking enough mental culture. If one would be a rounded perfect man he must develop SPIRIT, MIND and BODY.

The second of these objections, that of the athlete contracting disease and dying young, is absurd, as history proves that this is not a fact. Worry, not exercise, kills. It is not movement, but rust that ruins machinery. It is not the ship at sea, but the ship at wharf that rots the faster. Running water purifies itself.

Suppose a few athletes (?) do die young, are the others to be condemned on that account? Most every one knows that exercise can be carried to excess, as in eating, drinking or any other good thing. Can an athlete over-eat, drink liquors, prostitute himself and break every other law of health and hygiene and live long? Certainly not; for while an athlete can stand more abuse of the body than can a man of sedentary occupation, still he is human and will succumb to deadly drugs and excess. While we hear or read of a celebrated athlete dying of disease, how many there are whom we barely take note of, who drop dead of heart disease caused by muscular inactivity.

Let us open the Bible. Do we not find that those whom God chose as leaders were strong men? Moses was a man of strength, else the years of march over desert, sea and mountain would have exhausted him; the anxiety of the Exodus would have crushed him. He came through all this in splendid condition, for we are told that "Moses was an hundred and twenty years old when he died; his eye was not dim, nor his natural force abated." David was a man of strength, for when a lad tending sheep he killed a lion and a bear, besides the giant Goliath. Elijah was a man strong in body, as he ran swiftly for eighteen miles in front of Ahab's chariot. Saul was a strong man, but prostituted his strength because of his evil doing. Sampson was the strongest man whom the world has ever known. Daniel and many others of the Bible were strong men.

Socrates, the heathen philosopher of Athens, was a strong man. His school was the workshop and the gymnasium. In Harrison's Story of Greece, we are told that he surpassed all men in physical endurance.

Demosthenes, the great Greek orator, when a boy was weak and sickly. The stammering of his tongue he corrected by prac-

tising with pebbles in his mouth; his voice he strengthened by vigorous exercise.

Cicero, Rome's great orator, had stated hours for his exercise. Cæsar was an extremely skillful swordsman and horseman, and a good swimmer. Hannibal and Alexander were great generals, whose bodies were strong, who could endure fatigue and the extremes of heat and cold. Lycurgus and Coriolanus were devotees of manly sports. Alcibiades became master of the Athenians by reason of eloquence, grace of person, and strength of body. Themistocles excelled in gymnastics. Sertorius is said to have swum the Rhone in full armor. Marius, Pelopides, Marcellus and Cato delighted in exercise and strength of the body. In short, ancient and mediæval history shows that brain and brawn were two characteristics of men whom the world recognized as leaders.

Modern history shows that our successful men had a good physical education. It reveals the fact that strength and longevity are found in those who follow Nature's laws.

It is said that Washington, after working all day in the forests of Virginia, would wrestle anyone who presented himself, and that he at one time wrestled seven men one after the other, and obtained a fall from each. Lincoln, Jefferson, Adams, Franklin, Jackson and Webster were men of strong physiques. Shakespeare, Byron, Goethe, Gladstone and Bismarck have won the admiration of the world by the physical bodies and master minds which they have possessed. Hundreds of great men might be named, whose bodies were strong and powerful. Who are the successful men to-day; those whom the world recognizes as great? Are they not strong physically?

Some seem to think that one exercises for the sole purpose of obtaining big muscles. This is one of the least reasons for exercise. By exercising the voluntary muscles we thereby strengthen

the involuntary muscles, such as the heart, etc., by increasing the circulation of the blood and respiratory organs. By our every movement, such as breathing, winking, and even thinking, certain cells are destroyed and must be replaced by others. This work is performed by the blood, which carries the old wornout cells to the lungs, skin and kidneys, and these organs discharge them from the body, while the blood, ever busy, lays down new material. Vigorous exercise tears down weak cells, and the blood, quickened by the exercise, quickly replaces the dead cells by the stronger living ones. Thus we see how one who exercises daily will soon become possessed not only with large and strong voluntary muscles, but with vital organs strong and vigorous.

The writer need hardly refer to the poses of himself. Suffice to say that at one time he was weak and sickly and regained health and strength not by change of climate, but by change of living, hardening the constitution by proper exercise, deep breathing, cold water baths and following the laws of nature. Some say that they follow the laws of nature, but it seems to me that they do not know many of her laws. If one can live when the germs of disease are in the food he eats, in the water he drinks, even in the air that he breathes, he can become strong and robust if he uses the powers which God has given him.

He who realizes the need of exercising his body, but is too lazy, or deems it inconvenient on account of time or location, must not be surprised if he deteriorates in bodily strength and vigor.

EXERCISES FOR DEVELOPING VARIOUS MUSCLES.

Following are some cuts, with movements and combinations. If one will work at these systematically, he will derive much benefit therefrom. Be sure and maintain as nearly as you can the proper posture, not only while exercising, but at *all* times Perform each exercise from ten to twenty times.

It is better to exercise on retiring, or the first thing in the morning, as much clothing restricts freedom of motion.

Many of the following exercises may be used in the school room : Figures 2, 3, 4, 5, 6, 7, 8 and 9. I hope the day will soon come when every public school will have a gymnasium for the use of both sexes, at which attendance shall be compulsory for all healthy children, and which shall be thrown open in the evening for a small fee to the older ones who have passed their compulsory course and who prefer to make their bodies strong and vigorous rather than walk the streets and visit questionable places.

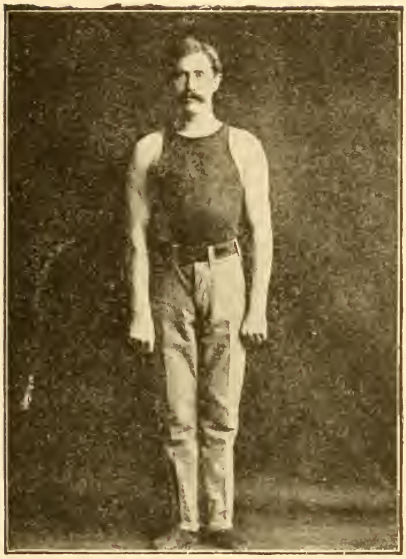


FIGURE 1—CORRECT POSTURE.

The chest should be thrown out strongly, chin drawn in toward the chest, abdomen in, back hollowed and hips extended. The best way for one to tell whether he has the right position or not, is to stand with the back to a wall with head, shoulders, hips and heels touching it. It is well to start with very simple exercises which bring the blood to the extremities, and then increase to a maximum, followed by deep breathing exercises.

FIGURE 2—OPENING AND SHUTTING OF FINGERS

1. Open the fingers with force, with
   (a) arms down at side as in figure.
   (b) arms held at front horizontal.
   (c) arms held at side horizontal.
   (d) arms held vertical.
2. The above, with fingers of one hand closed; other open, alternate.
3. Place hands on chest and open fingers as arms are extended down, side, front, vertical.

HAND-SHAKE.

Shake hands by bringing fingers toward wrist, then away; wrists very flexible. Down, side. front, vertical.

ROTATE ARMS

Down, side, front, vertical.
Flex wrists and rotate arms together.
Down, side, front, vertical.

FIGURE 3—ELEVATE SHOULDERS.

1. (a) Raise right shoulder.
   (b) Raise left shoulder.
   (c) Raise left and right alternate.
   (d) Raise left and right simultaneously.
   (e) Raise both together.
2. (a) Hold arms in front horizontal position, raise shoulders.
   (b) Hold arms in side horizontal position, raise shoulders.
3. Shoulder circles (circumduct) arms down at side, and
   (a) Move shoulders back and down.
   (b) Arms held at side horizontal; small circle, describe circle with hands, reverse.
4. The above exercises in the stoop-stand position. (Fig. 5.)
5. The above exercises in the arch-stand position. (Fig. 11.)

FIGURE 4—NECK EXERCISES.

1. Neck flexion—
   (a) bend forward till chin touches chest (See Fig.); bend backward to fullest extent.
   (b) flex neck from side to side.
2. Neck rotation—
   (a) rotate chin to right, return to front.
   (b) rotate chin to left, return to front.
   (c) rotate both right and left.
3. Circumduct neck, right, left (describe a circle with the head).
4. Project chin forward ; draw chin into chest (chest out strong in retraction).
5. Perform the above in the stoop-stand position. (Fig. 5.)

FIGURE 5.

1. From position of Fig. 1 bend forward from the hips to a stoop-stand position, keeping the chest out, back hollowed and head erect with
   (a) hands on hips.
   (b) hands behind head.
   (c) arms to side horizontal.
   (d) arms to front horizontal. (See Fig.)
   (e) arms to vertical.
2. Place the hands on the chest, bend body forward from the hips (stoop-stand), and hold this position while you perform *c*, *d* and *e* of the above (Fig. 5) exercises.
3. Bend forward from the hips, and extend right leg to the rear. Left leg. These may be accompanied by the above arm movements.

FIGURE 6.

1. Raise on toes with
   (a) hands on hips.
   *(b) hands behind head.
2. Raise arms sideways to side horizontal as heels are raised; drop as heels are lowered.
   (b) the same arms front horizontal.
   (c) the same arms vertical. (See Fig.)
3. Raise the toes with the above combinations.
4. Raise on one foot only, with above movements.
   (a) right.
   (b) left.
5. The above movements in the stride-stand position.
6. The above movements in the walk-stand position.

*When hands are behind the head, keep the elbows well back (arms in lateral plane).

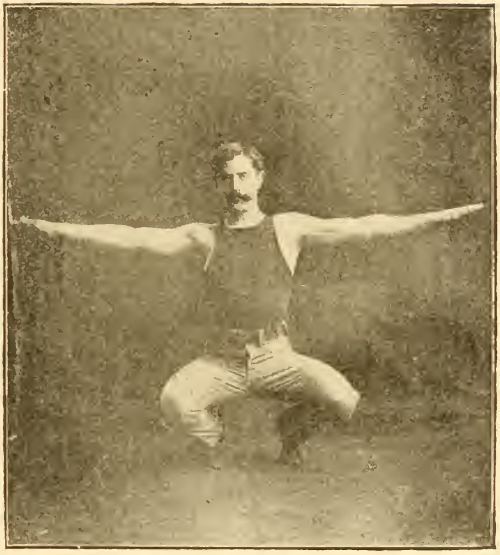


FIGURE 7.

*Full squat with

(a) hands on hips.
(b) hands behind head.
(c) arms raised to side horizontal. (See Fig.)
(d) arms raised to front horizontal.
(e) arms raised to vertical.

*Keep the body in an erect position ; do not lean forward ; chest out strong.

FIGURE 8.

1. Rotate the body from right to left with
   (a) hands on hips.
   (b) hands behind head. (See Fig.)
   (c) arms held at front horizontal.
   (d) arms held at side horizontal.
2. The above exercises by moving from the waist only; do not move the hips.

FIGURE 9.

Bend body from right to left with

(a) hands on hips.

(b) hands behind head. (See Fig.)

(c) arms held at vertical.

(d) arms held at side horizontal. Keep the arms the same distance apart.

FIGURE 10.

*Bend forward with

(a) hands on hips.
(b) hands behind head.
(c) arms held at side horizontal.
(d) arms held at vertical and touch floor. (See Fig.) Keep knees stiff.
(e) arms thrust to the rear as you bend forward.

*Keep the chest well thrown out on this set of exercises. These are not good for children unless the correct position can be maintained.

FIGURE 11.

1. Arch flexion with
   (a) hands on hips.
   (b) hands behind head.
   (c) arms vertical. (See Fig.)
   (d) combine Figs. 5 and 6.
2. Arch flexion, and
   (a) extend right leg forward.
   (b) extend left leg forward.

FIGURE 12—CHARGING EXERCISES *

1. Charge front, as in figure, with
   (a) arms vertical, right leg forward, left, alternate.
   (b) arms side horizontal, right leg forward, left, alternate.
   (c) arms front horizontal, right leg forward, left, alternate.
   (4) arms rear, right leg forward, left, alternate.
2. Charge side horizontal, right and left leg, with above arm movements.
3. Charge to the rear, right and left leg, with above arm movements.
4. Charge left and right, front oblique, with above arm movements.
5. Charge left and right, rear oblique, with above arm movements.

*A charge is about 2½ foot lengths. A lunge is performed the same as a charge.

FIGURE 13—LEG EXTENSION.

1. Hands on hips or clasped behind head, and
   (a) extend right leg forward.
   (b) extend left leg forward.
   (c) alternate.
2. From normal position bring arms vertical, arch back as the above are performed. (See Fig.)
3. Hands down at side, and
   (a) arms extended to the rear as right leg is extended front.
   (b) arms extended to the rear as left leg is extended front.
   (c) alternate.

This may be used as a stretching exercise.

FIGURE 14.

Bring the knee up to the chest,

(a) raise arms to side horizontal; knee to chest right, left
(b) raise arms to front horizontal; left to chest.
(c) raise arms vertical; right knee to chest, left.

Stationary running; do not gain ground and bring knees up as high as possible. (See Fig.)

Hands may be placed on hips, clasped behind head or held vertical.

FIGURE 15.

Stride-stand position, and
(a) bend to the right, touch the floor; arch back.
(b) bend to the left, touch the floor; arch back.
(c) combine the above.

CHARGE.

From normal position, arms vertical, and
(a) charge to the right, as in figure.
(b) charge to the left.
(c) alternate right and left.

EXTENSION.

Bend, as in figure, and
(a) extend right leg to the rear.
(b) extend left leg to the rear.
(c) Alternate

Note—When the right leg is extended to rear, extend left arm forward, and vice versa.

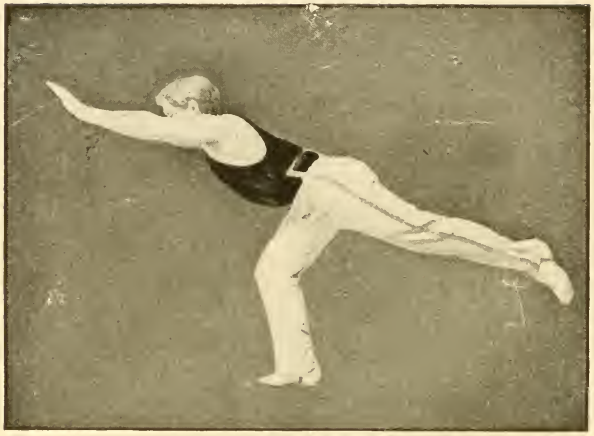


FIGURE 16—LEG EXTENSION.*

1. Hands placed on hips, and
   (a) extend right leg to the rear.
   (b) extend left leg to the rear.
   (c) alternate right and left.
2. Hands behind head, perform the above leg movements.
3. From normal posture raise arms to side horizontal and perform above leg movements.
4. Raise arms as in figure, with above leg movements.

*Vary the exercises by keeping the leg extended perfectly straight; also bend knee as in figure.

FIGURE 17—LEG ABDUCTION.

Hands behind head (arms akimbo), and
(a) abduct right leg.
(b) abduct left leg.
(c) alternate.
Arms held vertical, as in figure, and
(a) abduct right leg.
(b) abduct left leg.
(c) alternate.
Abduct right leg, as in figure; left hand on floor.
Abduct left leg, as in figure; right hand on floor.
Alternate.

This can be used as a stretching exercise.

FIGURE 18.

Stride-stand as in figure, and perform the following in four counts:

(a) 1, hands on chest; 2, between legs; 3, on chest; 4, side horizontal.

(b) 1, hands on chest; 2, between legs; 3, on chest; 4, front.

(c) 1, hands on chest; 2, between legs; 3, on chest; 4, vertical.

JUMPING EXERCISES.

Normal position, arms vertical, jump to position of figure.

Normal position, arms horizontal, jump to position of figure.

FOR BUSINESS MEN.

The remaining exercises are especially good for business men, or any one whose occupation is of a sedentary nature.

FIGURE 19.

Lie on stomach, and

(a) raise right arm. (Do not flex at elbow.)
(b) raise left arm.
(c) raise right leg. (Do not flex at knee.)
(d) raise left leg.
(e) raise both arms.
(f) raise both legs.
(g) raise both arms and legs. (See Fig.)

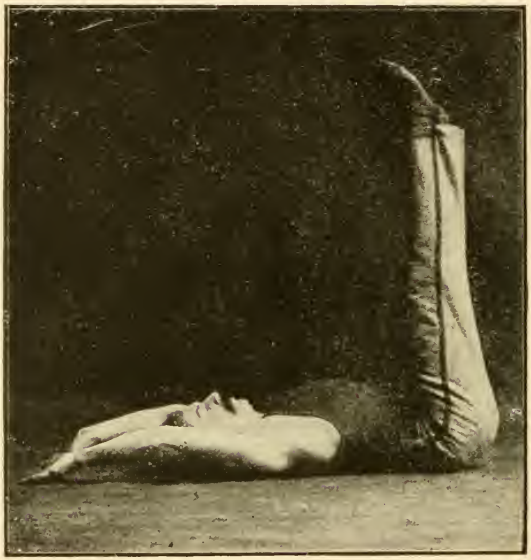


FIGURE 20.

Lie on back, arms extended to fullest extent, and

(a) raise right leg. (Do not flex the leg at knee.)
(b) raise left leg.
(c) raise right and left alternately.
(d) raise right and left simultaneously.
(e) both together. (See Fig.)

FIGURE 21.

Lie on back, arms extended to fullest extent, and
(a) raise body to sitting position, arms front. (See Fig.)
(b) the same, arms folded
(c) the same, arms vertical (chest out strong).

FIGURE 22—BACK LEANING REST.*

As in figure, and

(a) bring right knee up toward chest, left, alternate.
(b) raise right leg, left, alternate. (Do not bend knee.)
(c) sit on floor and raise body as in figure.

SITTING REST.

Sit on floor, and

(a) right knee to chest, left, alternate, simultaneous, both.
(b) raise right leg, left, alternate, simultaneous, both.
(c) abduct right leg, left, both together.
(d) cross right leg over left, left over right; cross both at once.

*Keep the head well back; more than in figure.

FIGURE 23—KEEP BODY RIGID.

1. Front leaning rest: keep the body rigid from head to feet. From position of (Fig. 23) flex arms till body almost touches floor; return to (Fig. 23) position.

   One should not try this movement until he has performed the others for some weeks unless he is quite strong, as it is quite hard to hold the correct position.

2. Front leaning rest, and
   (a) raise right arm forward.
   (b) raise left arm forward.
   (c) raise right leg.
   (d) raise left leg.

3. Front leaning rest, and slap the chest with both hands.

FIGURE 24—SIDE LEANING REST.

Rest on right side, and

(a) raise left arm vertical.
(b) raise left leg.
(c) raise arm and leg together.

Rest on left side, and

(a) raise right arm vertical
(b) raise left leg.
(c) raise arm and leg together.

FIGURE 25.

Raise the feet and shoulders from the floor about from 6 to 12 inches, hold position, and

(a) bring right knee to chest.
(b) bring left knee to chest.
(c) alternate.
(d) both.
(e) abduct both legs.

Do not perform many of these exercises at one time, as they are too severe.

Above position, hold and stretch.

USEFUL HINTS

DEEP BREATHING.

Finish your exercising by deep breathing. There are so many ways recommended that one becomes confused and therefore takes no special breathing exercises. The best way to breathe is to do so naturally without special instructions. Of course one cannot be expected to breathe naturally if corsets and other tight clothing are worn.

A good way to breathe while exercising is to breathe with positions and movements favorable to inspiration (in-breathing) and expiration (out-breathing).

(a) exhale as you drop chin on breast; inhale as you resume position of (Fig. 1).

(b) inhale as shoulders are raised; exhale as you lower them.

(c) inhale as you press the shoulders well back; draw them together as you exhale.

(d) place hands behind head and inhale as elbows are pressed well back, exhale as the elbows are brought toward each other.

(e) inhale as arms are raised to side horizontal, palms upward; bring arms to front, palms together, exhaling.

(f) take the position of (Fig. 5), inhale as you resume the position of (Fig. 1), exhale as you return to (Fig. 5).

HINTS ON RIGHT LIVING.

Exercise alone will not give one perfect health. One essential and probably most important thing is a pure, wholesome *diet*. It should consist chiefly of vegetables, fruit, *whole wheat bread*, and in fact, any food which tends to give one health and strength.

One of the worst evils, and it is taught us at an early age, is the habit of eating too *much* food. The child is no sooner old enough to desire food than he is overfed. When he cries

from the effects of having been already overfed, the stuffing process is repeated. In fact, feeding becomes the panacea for every ill. The stomach is thus unnaturally distended, and eventually becomes enlarged and diseased.

To whom shall we go for advice regarding our eating and drinking? Know thyself and the advice of others will not be needed? Every one should understand the great laws and principles of physiology and apply them with the aid of experience to his own case. But eating improper food, drinking too much fluid at meal time and eating too fast is injurious to every one. Alcoholic drinks, drugs, condiments, tea, coffee and tobacco should be avoided.

Pure fresh *air* at all times and plenty of *sunlight* are essential to gain and maintain health. As food is needed to supply our bodies with material, so air is needed to supply the greater amount of oxygen to purify the blood. As fish cannot live out of water, neither can man live without air. The lungs are not like a house, with windows and doors, through which the breeze plays freely. They are, rather, like a deep well, into which fresh air will not go, unless in some way a current is made. We make this current stronger by deep breathing.

This deep breathing or (lung gymnastics) develops and expands the lungs and chest and increases the circulation of the blood. Attending poorly ventilated public places are productive of disease. Our sleeping rooms should be well ventilated.

Some *occupations* are causes of disease, by their exhaustion, monotony, deprivation of healthly condition, and the utter hopelessness of improvement. Occupations of a sedentary nature are bad; therefore, one thus occupied should take plenty of bodily exercise. Millers, stone-cutters, bakers, cigar makers and those who are compelled to breathe dust and morbid matter into the system, are subject to affections of the throat and lungs. Painters, and workers in lead, arsenic, mercury, etc., are poisoned. Brewers and bartenders are short lived. Persons of consumptive tendency should work in the open air and practice deep breathing.

Unclean habits, wearing filthy clothes, neglect of *daily bathing*, tend to clog the pores, prevent the throwing out effete, waste

and morbid matters, cause the re-absorption of matter already expelled, and are fruitful causes of disease.

Water promotes health when taken internally or applied externally. For weak or sore eyes water is very healing. First bathe the eyes in water as hot as can be borne, then in water as cold as can be had. This is also an excellent tonic for the skin, and will serve the hands and face as a cosmetic and remove wrinkles.

An effective way to cure a cold is to discontinue eating for a few meals and drink plenty of water. The reason eating should be discontinued is that in most cases it is overeating that causes colds. A cold is produced by the efforts of nature trying to throw off the impurities that have accumulated in the system.

For sore throat I have found that a handkerchief saturated with cold water tied about the neck to be quite effective in relieving it. It is better to tie some dry material over the wet application, and thus prevent catching cold. This application is also good for rheumatic joints, torpid liver, weak stomach, bronchial and pulmonary affections and varicocele. For liver and stomach complaints, wear the bandage around the abdomen.

A liberal supply of pure water taken internally tends to make one fleshy, is good for the kidneys and cures constipation by making the liver active. It is better to wait a couple of hours after meals before drinking much water.

Violent and sudden *emotions* sometimes terminate in sickness and even death. Our every emotion tends to develop the body into beauty or ugliness. If one thinks of disease and imperfection all the time he cannot expect to have perfect health. Again, if he permits his mind to dwell on illicit thoughts and deeds, how quickly will the sexual organism become tainted, stultifying the intellect, deadening the sensibilities, dwarfing the soul. If one would be pure and continent, he should not entertain sensuous thoughts, but exert the will power and change the train of thought. Anger, jealousy, worry and hurry, grief, discontent, lack of self-control, passion, illicit imaginings all tend to make our bodies repulsive and diseased, while high and lofty thoughts, will power, love, charity, exercise and a Christian life imparts health.

There are many causes and conditions of disease, such as improper clothing, insufficient rest and sleep, etc., which we cannot discuss for want of space, but allow me to recommend four great natural curative agencies that should be studied: *Air*, *Diet*, *Water* and *Exercise*.

HOW TO INCREASE ONE'S WEIGHT.

Practice exercising rather slowly, in bathing use cold water sparingly, only enough to protect from colds; sleep eight or ten hours, dress warmly, eat principally cereals, eggs (raw or soft boiled), nuts, milk and hot water, peas and beans, baked apples and other sweet fruits, beef and fowl, rice and baked potatoes, and *whole wheat bread*.

HOW TO REDUCE ONE'S WEIGHT.

If the heart is sound, exercise vigorously and often, take cold baths daily, dress lightly, do not sleep over eight hours, eat principally fruit, fresh vegetables, fresh water fish, whites of eggs, wheat gluten, lean beef, mutton, chicken and veal, not more than three or four ounces of liquids at each meal, and but little between. Avoid fried foods of all kinds, fat meat, milk, potatoes, starch, pastry, cakes and sugar. Keep the bowls active.

BATHING. NEVER BATHE JUST BEFORE OR AFTER A MEAL.

Always bathe after exercise, using graded bath, beginning with warm water for cleansing, gradually reduce temperature until as cold as desired. Rub with a coarse towel until a good reaction is produced.

HELP IN CASE OF ACCIDENTS

This was taken from the "Gymnasium Director's Pocket Book."

DROWNING. 1. Loosen clothing, if any. 2. Empty lungs of water by laying body on its stomach and lifting it by the middle so that the head hangs down. Jerk the body a few times. 3. Pull tongue forward, using handkerchief, or pin with string, if necessary. 4. Imitate motion of respiration by alternately compressing and expanding the lower ribs, about twenty times a minute. Alternately raising and lowering the arms from the sides up above the head will stimulate the action of the lungs. Let it be done gently but persistently. 5. Apply warmth and friction to extremities. 6. By holding tongue forward, closing the nostrils and pressing the "Adam's apple" back (so as to close entrance to stomach), direct inflation may be tried. Take a deep breath and breathe it forcibly into the mouth of patient, compress the chest to expel the air, and repeat the operation. 7. DON'T GIVE UP! People have been saved after HOURS of patient, vigorous effort. 8. When breathing begins, get patient into a warm bed, give WARM drinks, or spirits in teaspoonfuls, fresh air and quiet.

BURNS AND SCALDS. Cover with cooking soda, and lay wet cloths over it. Whites of eggs and olive oil. Olive or linseed oil, plain, or mixed with chalk or whiting.

LIGHTNING. Dash cold water over the person struck.

SUNSTROKE. Loosen clothing. Get patient into shade, and apply ice-cold water to head.

MAD DOG OR SNAKE BITE. Tie cord tight above wound. Suck the wound and cauterize with caustic or white-hot iron at once, or cut out adjoining parts with a sharp knife.

VENOMOUS INSECTS' STINGS, ETC. Apply weak ammonia, oil, salt water, or iodine.

SANDOW'S PATENT SPRING GRIP DUMB BELLS

A. G. Spalding & Bros., Sole American and Canadian Licensees

EUGEN SANDOW, Patentee

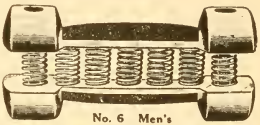
Sandow Patent Spring Grip Dumb Bells are used by all the greatest athletes in their training.

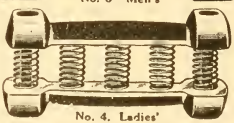
An entire system of physical culture is embraced within the exercises possible with these wonderful dumb bells.

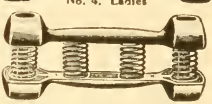
The bells are made in two halves connected by steel springs, the effort necessary in gripping compelling the pupil to continually devote his whole mind to each movement. This concentration of will power on each muscle involved is what is responsible for the great results obtained through properly exercising with them.

No 6. MEN'S. Nickel-plated; seven steel springs . . . . . Pair, **$3.00**
No 5. MEN'S. Black enameled, five steel springs . . . . . Pair, **$2.00**
No. 4. LADIES' Nickel-plated, five steel springs . . . . . Pair, **$2.50**
No. 2. BOYS'. Nickel-plated; four steel springs . . . . . Pair, **$2.00**

We include with each pair of Sandow Dumb Bells a chart of exercises by Sandow and full instructions for using. This is the most complete exercising chart ever devised and yet it is very plain and easy to understand. Profusely illustrated.


No. 6 Men's


No. 4. Ladies'


No. 2. Boys'


Model AW Dumb Bells

Spalding Trade-Mark Wood Dumb Bells

Model AW (Stained Finish.) Spalding Trade-Mark quality. Made of good material and superior in shape and finish to the best wood dumb bells of other makes. Each pair wrapped in paper bag. Weights specified are for each bell

½ lb. Bells. Pair, **35c.** ★ *$3.36 Doz* | 1 lb. Bells. Pair, **45c.** ★ *$4.44 Doz*
¼ lb. Bells. " **40c.** ★ *3.90* " | 1½ lb. Bells. " **55c.** ★ *5.70* "
2 lb. Bells. Pair, **70c.** ★ *$7.20 Doz.*


Iron Dumb Bell

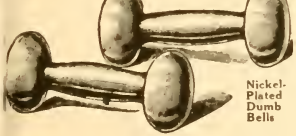
Spalding Iron Dumb Bells—Made on approved models, nicely balanced and finished in black enamel. Sizes 2 to 40 lbs. Pound **6c.** ★ *5c. lb.* Over 40 lbs. Pound **8c.** ★ *6½c. lb.*

Bar Bells, weight 25 lbs. or more for complete Bar Bell, supplied regularly with steel handles, length 3 feet between bells . . **12c.** lb. ★ *10½c. lb.*

Bar Bells, weight 25 lbs. or more for complete Bar Bell, with steel handles, either shorter or longer than regular length, as noted above. **15c.** lb. ★ *13½c. lb.*

Prices for Bar Bells, weighing other than above, quoted on application.

Quantity prices in italics will be allowed on 25 lbs. or more of iron dumb bells or 100 lbs. or more of bar bells.


Nickel-Plated Dumb Bells

Spalding Nickel-Plated Dumb Bells (Nickel-Plated and Polished)

No. 1N. 1 lb. Pair, **30c.** ★ *$3.24 Doz.* | No. 3N. 3 lb. Pair, **70c.** ★ *$7.56 Doz.*
No. 2N. 2 lb. " **50c.** ★ *5.40* " | No. 4N. 4 lb. " **85c.** ★ *9.28* "
No. 5N. 5 lb. Pair, **$1.00** ★ *$10.80 Doz.*

WITH RUBBER BANDS

No. 1B. 1 lb. Pair, **50c.** ★ *$5.40 Doz.* | No. 3B. 3 lb. Pair, **$1.00** ★ *$10.80 Doz.*
No 2B. 2 lb. " **75c.** ★ *8.10* " | No. 4B. 4 lb. " **1.25** ★ *13.50* "
No. 5B. 5 lb. Pair, **$1.50** ★ *$16.20 Doz.*


Nickel-Plated Dumb Bells, with Rubber Bands

The prices printed in italics opposite items marked with ★ will be quoted only on orders for one-dozen pairs or more on sizes up to one pound, and on one-half dozen pairs or more on sizes over one pound in weight. Quantity prices will NOT be allowed on items NOT marked with ★

SPALDING TRADE-MARK INDIAN CLUBS

STAINED FINISH

The following clubs bear our Trade-Mark, are made of good material, and are far superior in shape and finish to the best clubs of other makes. Each pair wrapped in paper bag.

No. A No. AA

Model BS—*Weights specified are for each club*

½ lb.	Pair, $	.35 ★	*$3.36 Doz.*
¾ lb.	"	.40 ★	*3.96* "
1 lb.	"	.45 ★	*4.44* "
1½ lb.	"	.55 ★	*5.76* "
2 lb.	"	.70 ★	*7.20* "
3 lb.	"	.85 ★	*9.12* "

Model BS

Spalding Exhibition Clubs

Handsomely finished in ebonite; for exhibition and stage purposes. The clubs are hollow, with large body, and although extremely light, represent a club weighing three pounds or more.

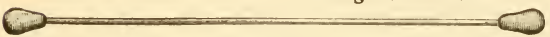
No. A. Ebonite finish. . . . . Pair, $3.50
No. AA. With German silver bands. . . " 5.00

Indian Club and Dumb Bell Hangers

Made of Iron and Nicely Japanned

No. 1. Pair, 15c. ★ *$1.68 Doz.*
No. 1M. Mounted on oak strips. Pair, 25c. ★ *$2.70 Doz.*

Savage Bar Bell



Especially designed by Dr. Watson L. Savage

Model S. Has large pear shaped ends, with a flexible hickory shaft ½-inch in diameter, producing a vibratory exercise similar to that obtained with the French wand. Each, 50c. ★ *$5.40 Doz.*

Spalding Ash Bar Bells

No. 2. Selected material, highly polished, 5 feet long. . Each, 45c. ★ *$4.50 Doz.*

School Wand

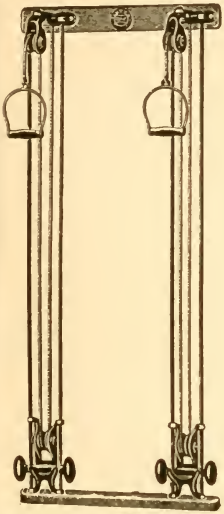
No. 3. 3½ feet long. Straight grain maple, black finish. Each, 12c. ★ *$1.20 Doz.*

Calisthenic Wand

No. 4. 4½ feet long. 1 inch diameter. Black finish. . . . . Each, 15c. ★ *$1.44 Doz.*

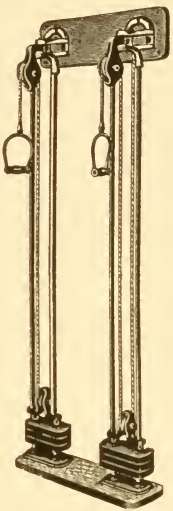
The prices printed in italics opposite items marked with ★ will be quoted only on orders for one dozen pairs or more on sizes up to one pound, and on one-half dozen pairs or more on sizes over one pound in weight. On Wands and Bar Bells quantity prices will be allowed on one-half dozen or more.

SPALDING CHEST WEIGHT MACHINES



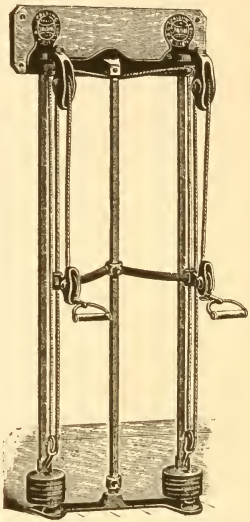
Spalding Chest Weight No. 2

No. 2. A good machine for home use; noiseless and durable. Well made and easy running. Rods are 3/16-inch coppered spring steel. Weights are 5-lb. iron dumb bells, one to each carriage, and may be removed and used as dumb bells. Wall and floor boards are hard wood, nicely finished and stained. All castings heavily japanned. Every part of machine guaranteed free of defect. . . . . Each, **$5.00**



Spalding Chest Weight No. 12

No. 12. This machine, especially designed for home exercise, will be found high grade in every particular. Cast iron parts are all nicely japanned. The wheels are iron, turned true on centers, and have hardened steel cone point bearings. The guide rods are spring steel, copperplated. The weight carriage has removable felt bushings, noiseless and durable. Each handle is equipped with 10 pounds of weights. . . . . Each, **$10.00**

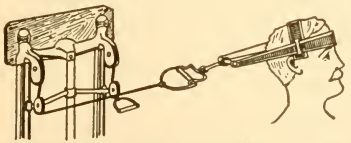


Spalding Chest Weight No. 5

No. 5. Because of its adjustment feature, which permits of all lower, as well as direct chest movements, this machine really combines two machines in one, and is particularly suitable where space is a consideration. The various changes are made by raising or lowering the center arm, requiring but a few seconds. Japan finish. Each machine is equipped with 16 pounds of weights. Ea., **$15.00**
Extra weights for above, 1¼ lbs. Ea., **.20**

Spalding Head and Neck Attachment

For business men. Overcomes tendency to forward head, due to continuous work at desk. For women, will help develop a nicely rounded neck.

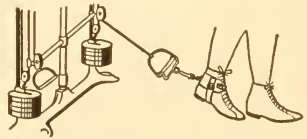


Illustrating Method of Fastening Head and Neck Attachment to No. 5 Chest Weight Machine.

No. 3. Heavy cowhide. Ready for use by simply snapping to one of the handles or both. . . Each, **$1.50**

Spalding Foot and Leg Attachment

This provides a local exerciser for all muscles of the leg. As such it is an excellent device for strengthening weak muscles, toning up others and giving exercise to stiff joints.

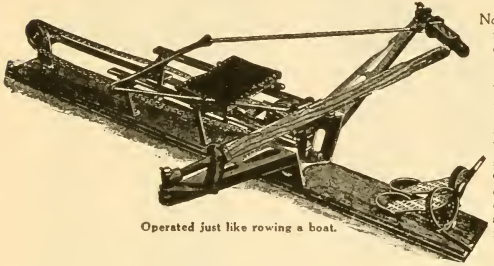


Illustrating Method of Fastening Foot and Leg Attachment to No. 5 Chest Weight Machine.

No. 2. Heavy cowhide. Readily attached to one handle or both; can be worn with or without shoe. . Each, **$1.50**

SPALDING CHAIN BELT ROWING MACHINE No. 600

Suitable Alike for the Athlete or the Ordinary Man or Woman



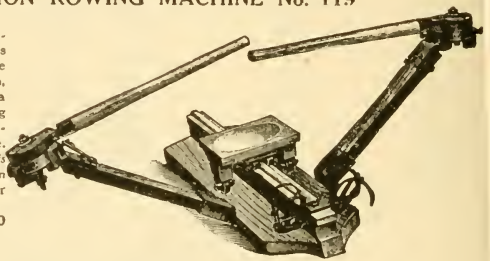
Operated just like rowing a boat.

No. 600. The ideal boat for home use and training purposes. Brings the exercise usually obtained on river or lake into the home or bedroom. Fitted with roller seat and adjustable shoes to fit either a tall or a short person. Thumb-nut arrangement controlling belt allows more or less friction to be thrown into the running parts, imitating the resistance which exists when forcing a row boat through the water. The resistance may be reduced for the weaker sex or increased to suit the strongest athlete. Oars are pivoted in such a way that operator can handle and turn them same as he would during the return and feathering motion with a boat oar. Floor space required, 6 x 5 feet. . . . . Each, $30.00

SPALDING FRICTION ROWING MACHINE No. 119

No. 119. The means used to produce the resistance is a simple friction clutch, which takes instant hold at the commencement of the stroke and retains the pressure till its completion, when it instantly releases it, precisely as in a boat. Quickly taken apart without loosening any bolts or screws. Each machine is adjustable to any amount of friction or resistance. *Do not use oil on friction cylinder. If its action is not perfectly smooth a little clear soap rubbed on its surface will properly correct its action.* Floor space required, 4½ feet by 4½ feet.

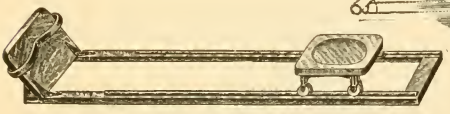
Complete, $16.00



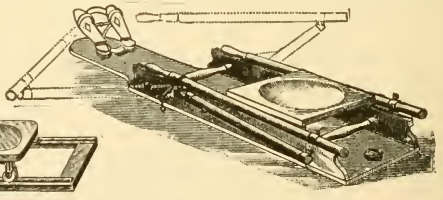
SPALDING ROWING ATTACHMENTS

For use with No. 5 Chest Weight Machines

Particularly suitable for home use. Can be detached from the weight machine quickly and put away in a very small space until the next opportunity for use presents itself. To be used in connection only with chest weights, like Spalding No. 5 (see opposite page) which have center arm adjustment, or with handles arranged so that they can be pulled from a bracket close to the floor.



No. R



No. 1

No. R. Designed to fill the demand for a low priced article of this kind, built along substantial lines. Gives entire satisfaction. Floor space required, 4½ feet by 12 inches. . . . . Complete, $7.50

No. 1. This attachment, as will be noted, has out-riggers and arms similar to the rowing machine, and offers a great variety of work when used in connection with chest weight. Floor space required, 4½ feet by 4½ feet. . . . . Complete, $10.00

NOTE—These Rowing Attachments, Nos. 1 and R, can be used only in connection with the No. 5 Type of Chest Weight Machine

Spalding Adjustable Doorway Horizontal Bar

No. A. The bar itself is made of selected hickory, having steel tubular ends into which iron sockets screw, holding rubber cushions. The socket on one end contains a left hand thread, on the other end a right hand thread. By fitting the bar in the doorway and turning it with the hands the ends are made to expand, and the friction applied by the rubber against the sides of the doorway is sufficient to sustain the weight of a heavy man. This bar may be used for chinning exercises, being adjustable to any height, also for abdominal work, as shown by cuts in margin of this page. Size of doorway in which bar will be used must be stated when ordering, as the adjustment is not great enough to meet all requirements in one size bar. . . . . Each, $4.00

This No. A Bar is supplied regularly to fit any doorway under 33 inches in width.

Bars to fit wider doorways. . . . . Extra, 50c.

Should not be used in doorways wider than 42 inches. If length larger than 42 inches is required, it would be advisable to use a regular horizontal bar.

Spalding Catalogue of Equipment for Gymnasiums sent on application, to interested parties

Spalding Doorway Horizontal Bar

No. 101. The keys fastened to each end of bar fit in the side sockets, which are secured to door jamb and hold the bar firmly in place. The parts are of malleable iron, very light, yet strong enough to sustain the heaviest man. The bar may be quickly removed when not in use, leaving no projecting part. Complete with parts. $2.00

This No. 101 Bar is supplied regularly to fit any doorway under 37 inches. Bars to fit wider doorways, Extra, 50c. Should not be used in doorways wider than 42 inches. If length larger than 42 inches is required, it would be advisable to use a regular horizontal bar.

Extra sockets for doorway. Pair, 50c.

With two pairs of sockets bar may be used for either chinning or abdominal exercises.

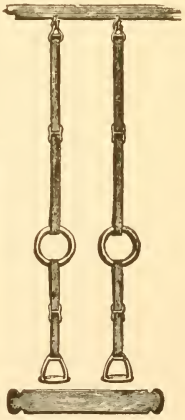
Spalding Home Gymnasium

Combining Swinging Rings, Trapeze, Stirrups, and Swing. Should be in every home where there are growing boys and girls. The simplest and best form of exercise for them.

No. 1. The apparatus is supported by two strong screw-hooks in the ceiling, about eighteen inches apart. It can also be used out of doors. The straps are of extra strong webbing and adjustable to any desired height; rings heavily japanned. The apparatus can be put up in any room, and removed in a moment, leaving only two hooks in the ceiling visible. The various combinations can be quickly and easily made. We furnish in addition, a board adjustable to the stirrups, which forms an excellent swing. Complete, ready to put up. $6.00

Showing Swinging Ring or upper portion of outfit

Showing upper part of Apparatus with trapeze bar attached



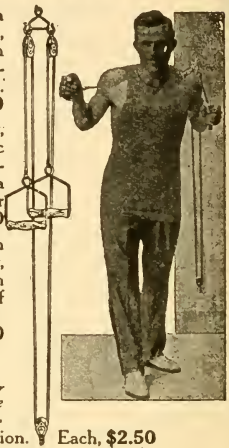
Showing complete outfit with exception of trapeze bar which is supplied

Spalding Elastic Exercisers

No. 3. Spalding **"Special"** Elastic Exerciser, with chart of exercises and Spalding Athletic Library, No. 29, "Pulley Weight Exercises." Complete in box, with charts, door hinge attachment and package of hooks. Choice of heavy or medium cable. Improved in quality and finish. . Each, **$5.00**

No. 1. Spalding **"Standard"** Elastic Exerciser, with a chart of exercises and Spalding Athletic Library, No. 29, "Pulley Weight Exercises." Complete in box, with door hinge attachment and a package of hooks. Choice of either heavy or medium cable. . . . . Each, **$3.00**

No. 0. Spalding **"Lively"** Elastic Exerciser, with chart of exercises and Spalding Athletic Library, No. 29, "Pulley Weight Exercises." Complete in box, with door hinge attachment and package of hooks. Choice of heavy or medium cable. Each, **$2.00**



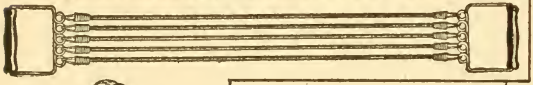
EXTRA CABLES

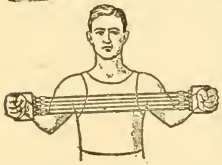
Complete with Swivel Ends, for Spalding Elastic Exercisers

Cables are packed each in individual tubes, convenient for handling or mailing. This also keeps the rubber from the light and air. If not specified, medium tension will be sent.

Style **C.** Cable only, for No. 3, Elastic Exerciser. Heavy or medium tension. Each, **$2.50**
Style **B.** Cable only, for No. 1, Elastic Exerciser. Heavy or medium tension. . " **1.50**
Style **A.** Cable only, for No. 0, Exerciser. Either heavy or medium tension. . " **1.25**

Spalding Health Pull





No. **HP.** Formed of five cords of heavy elastic, durable in quality. Has two handles, one at each end, and strength may be varied by using with different numbers of cords. A very beneficial article of exercise. Each. **$1.50**

Spalding Elastic Home Exerciser

No Pulleys

It is readily attached to door frame, window casing or any convenient place in room, is absolutely noiseless, takes very little space, and can be quickly removed when not in use.

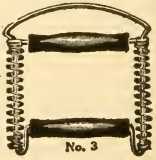
No. **1H.** Heavy Tension Elastic. Each, **$1.00**
No. **2M.** Medium Tension Elastic. . . . . Each, **85c.**
No. **3L.** Light Tension Elastic. Each. **70c.**

Spalding Wrist Machines

Strengthens and develops fingers, hands, wrists, arm and forearm. Cures cramps and stiffness of joints.

No. 1

No. **1.** Elastic cord, wood handle. Each, **25c.**
No. **2.** Elastic cord, cork handle. Each, **50c.**
No. **3.** Metal springs, wood handle. Ea. **25c.**



No. 3

STANDARD QUALITY

An article that is universally given the appellation *"Standard"* is thereby conceded to be the Criterion, to which are compared all other things of a similar nature. For instance, the Gold Dollar of the United States is the Standard unit of currency, because it must legally contain a specific proportion of pure gold, and the fact of its being Genuine is *guaranteed* by the Government Stamp thereon. As a protection to the users of this currency against counterfeiting and other tricks, considerable money is expended in maintaining a Secret Service Bureau of Experts. Under the law, citizen manufacturers must depend to a great extent upon Trade-Marks and similar devices to protect themselves against counterfeit products—without the aid of "Government Detectives" or "Public Opinion" to assist them.

Consequently the "Consumer's Protection" against misrepresentation and "inferior quality" rests entirely upon the integrity and responsibility of the "Manufacturer."

A. G. Spalding & Bros. have, by their rigorous attention to "Quality," for forty years, caused their Trade-Mark to become known throughout the world as a Guarantee of Quality as dependable in their field as the U. S. Currency is in its field.

The necessity of upholding the guarantee of the Spalding Trade-Mark and maintaining the Standard Quality of their Athletic Goods, is, therefore, as obvious as is the necessity of the Government in maintaining a Standard Currency.

Thus each consumer is not only insuring himself but also protecting other consumers when he assists a Reliable Manufacturer in upholding his Trade-Mark and all that it stands for. Therefore, we urge all users of our Athletic Goods to assist us in maintaining the Spalding Standard of Excellence, by insisting that our Trade-Mark be plainly stamped on all athletic goods which they buy, because without this precaution our best efforts towards maintaining Standard Quality and preventing fraudulent substitution will be ineffectual.

Manufacturers of Standard Articles invariably suffer the reputation of being high-priced, and this sentiment is fostered and emphasized by makers of "inferior goods," with whom low prices are the main consideration.

A manufacturer of recognized Standard Goods, with a reputation to uphold and a guarantee to protect, must necessarily have higher prices than a manufacturer of cheap goods, whose idea of and basis of a claim for Standard Quality depends principally upon the eloquence of the salesman.

We know from experience that there is no quicksand more unstable than poverty in quality—and we avoid this quicksand by Standard Quality.

A. G. Spalding & Bros.

STANDARD POLICY

A Standard Quality must be inseparably linked to a Standard Policy.

Without a definite and Standard Mercantile Policy, it is impossible for a Manufacturer to long maintain a Standard Quality.

To market his goods through the jobber, a manufacturer must provide a profit for the jobber as well as for the retail dealer. To meet these conditions of Dual Profits, the manufacturer is obliged to set a proportionately high list price on his goods to the consumer.

To enable the glib salesman, when booking his orders, to figure out attractive profits to both the jobber and retailer, these high list prices are absolutely essential; but their real purpose will have been served when the manufacturer has secured his order from the jobber, and the jobber has secured his order from the retailer.

However, these deceptive high list prices are not fair to the consumer, who does not, and, in reality, is not ever expected to pay these fancy list prices.

When the season opens for the sale of such goods, with their misleading but alluring high list prices, the retailer begins to realize his responsibilities, and grapples with the situation as best he can, by offering "special discounts," which vary with local trade conditions.

Under this system of merchandising, the profits to both the manufacturer and the jobber are assured; but as there is no stability maintained in the prices to the consumer, the keen competition amongst the local dealers invariably leads to a demoralized cutting of prices by which the profits of the retailer are practically eliminated.

This demoralization always reacts on the manufacturer. The jobber insists on lower, and still lower, prices. The manufacturer, in his turn, meets this demand for the lowering of prices by the only way open to him, viz.: the cheapening and degrading of the quality of his product.

The foregoing conditions became so intolerable that, 17 years ago, in 1899, A. G. Spalding & Bros. determined to rectify this demoralization in the Athletic Goods Trade, and inaugurated what has since become known as "The Spalding Policy."

The "Spalding Policy" eliminates the jobber entirely, so far as Spalding Goods are concerned, and the retail dealer secures the supply of Spalding Athletic Goods direct from the manufacturer by which the retail dealer is assured a fair, legitimate and certain profit on all Spalding Athletic Goods, and the consumer is assured a Standard Quality and is protected from imposition.

The "Spalding Policy" is decidedly for the interest and protection of the users of Athletic Goods, and acts in two ways:

FIRST.—The user is assured of genuine Official Standard Athletic Goods.
SECOND.—As manufacturers, we can proceed with confidence in purchasing at the proper time, the very best raw materials required in the manufacture of our various goods, well ahead of their respective seasons, and this enables us to provide the necessary quantity and absolutely maintain the Spalding Standard of Quality.

All retail dealers handling Spalding Athletic Goods are requested to supply consumers at our regular printed catalogue prices—neither more nor less—the same prices that similar goods are sold for in our New York, Chicago and other stores.

All Spalding dealers, as well as users of Spalding Athletic Goods, are treated exactly alike, and no special rebates or discriminations are allowed to anyone.

This, briefly, is the "Spalding Policy," which has already been in successful operation for the past 17 years, and will be indefinitely continued.

In other words, "The Spalding Policy" is a "square deal" for everybody.

A. G. SPALDING & BROS.

SPALDI

ATHLETIC LIB

A separate book covers every Athletic Sport and is Official and Standard

Price 10 cents each

GRAND PRIZE

ST. LOUIS, 1904

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GRAND PRIX

PARIS, 1900

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ARE THE STANDARD OF THE WORLD

A. G. SPALDING & BROS.

MAINTAIN WHOLESALE *and* RETAIL STORES *in the* FOLLOWING CITIES

NEW YORK
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BUFFALO
SYRACUSE
ROCHESTER
BALTIMORE
WASHINGTON
LONDON, ENGLAND
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BIRMINGHAM, ENGLAND
MANCHESTER, ENGLAND
BRISTOL, ENGLAND
EDINBURGH, SCOTLAND
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CHICAGO
MILWAUKEE
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ST. LOUIS
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SAN FRANCISCO
LOS ANGELES
SEATTLE
SALT LAKE CITY
PORTLAND
MINNEAPOLIS
ST. PAUL
DENVER
DALLAS
PARIS, FRANCE
SYDNEY, AUSTRALIA

Factories owned and operated by A. G. Spalding & Bros. and where all of Spalding's Trade-Marked Athletic Goods are made are located in the following cities

NEW YORK · CHICAGO · SAN FRANCISCO · CHICOPEE, MASS.
BROOKLYN · BOSTON · PHILADELPHIA · LONDON, ENG.